

REMARKS

Applicant has reviewed the Office Action mailed January 18, 2006.

Claims 1, 2, 4, 7, 8, 11, 12, 14, 15, 21, 25, 26, 29-31, 40-42, 44, 45, and 52-55 were pending at the time of the Office Action, with claims 3, 5, 6, 9, 10, 13, 16-20, 22-24, 27, 28, 32-39, 43, 46-51, and 56-60 having previously been withdrawn.

Claims 1, 21, 40, and 52 are amended.

Claims 44 is canceled, rendering moot rejections directed to this claim.

Thus, claims 1, 2, 4, 7, 8, 11, 12, 14, 15, 21, 25, 26, 29-31, 40-42, 45, and 52-55 remain pending.

NUMBERING OF THE CLAIMS

Applicant's attorney apologizes for the inadvertent omission of withdrawn claim 23 in the listing of the claims presented in the response to a restriction requirement. For the sake of consistency within the prosecution history, applicant's attorney has included withdrawn claim 23 in the listing, and hopes this is acceptable to the Examiner. Alternatively, because claim 23 was not included in the most recently presented listing of the claim, applicant is amenable to claim 23 being canceled. In either case, applicant's attorney hopes that this presentation of the claims will be easier for the Examiner to review, rather than renumbered each of the claims following the inadvertently omitted claim 23.

REJECTION PREDICATED ON COMMONLY ASSIGNED REFERENCE

Claim 53 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,423,082 to Reyner (hereinafter, “Reyner”) in view of U.S. Patent No. 4,684,113 to Douglas et al. (hereinafter, “Douglas”). However,

1 Douglas is assigned to the assignee of the present application, The Boeing
2 Company. Because, at the time the invention of the present application was made,
3 the invention was owned by The Boeing Company, under 35 U.S.C. § 103(c),
4 Douglas cannot be cited as a prior art reference under 35 U.S.C. § 103(a).
5 Accordingly, because the Office Action relies on Douglas in rejecting claim 53,
6 applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) be
7 withdrawn against claim 53, and that claim 53 be allowed.

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9 **REJECTIONS UNDER 35 U.S.C. § 102(b)**

10 Claims 40, 41, and 52 were rejected under 35 U.S.C. § 102(b) as being
11 anticipated by U.S. Patent No. 3,423,082 to Reyner (hereinafter, "Reyner").
12 Applicant respectfully traverses this rejection.

13 Claims 40 and 52 have been amended to further distinguish over the
14 reference cited. Claim 40 as amended is reproduced below for the convenience of
15 the Examiner:

16 40. (Currently Amended) A clamping system for
17 manufacturing, the clamping system comprising:

18 one or more force applying units, each force applying unit
19 including a body and a force applying member movably
20 attached to the body arranged to apply a clamping force to a
work piece, wherein the force applying members are
configured to be laterally simultaneously motivated by an
externally-powered force unit that drives the force applying
member relative to the body; and

21 one or more coupling units operatively coupled to the force
22 applying units, each coupling unit including a movable pivot,
23 attached to and interspersed with the one or more force
24 applying units forming a chain of force applying units and
coupling units.

25 Reyner fails to teach or even suggest each of the elements recited by claim 40 and,
thus, Reyner fails to anticipate what is recited by claim 40.

1 Respectfully, Reyner fails to disclose a “plurality of force applying
2 units . . . wherein the force applying members are configured to be laterally
3 simultaneously motivated by an externally-powered force unit” as recited by claim
4 40 as amended. Reyner discloses a ring of screw-driven clamps that are
5 rotationally motivated to apply force. For that matter, each of the references cited
6 employs either screw-driven clamps or hinged pliers, as will be described further
7 below. Accordingly, because Reyner does not teach force applying members that
8 are laterally motivated, claim 40 is not anticipated by the cited reference.

9 Moreover, neither Reyner nor any of the other references cited teaches or
10 suggests a plurality of force applying members that are simultaneously motivated
11 by an externally-powered force unit. The clamping systems depicted in Reyner, as
12 well as other references cited in the Office Action, all employ hand-powered
13 devices tightened by manual action, one at a time, to secure articles in place.
14 Specifically, Reyner discloses force applying members that are actuated by the
15 turning of individual screws. Reyner discloses nothing that would suggest the
16 force members simultaneously are motivated, or are motivated by an externally
17 powered force unit. Accordingly, because Reyner fails to disclose “a plurality of
18 force units being configured to be simultaneously laterally motivated by an
19 externally-powered force unit,” the anticipation rejection should be withdrawn and
20 claim 40 as amended should be allowed.

21 Claim 41 depends from and applies additional limitations to claim 40.
22 Respectfully, because claim 40 is in condition for allowance, claim 41 is allowable
23 for at least the same reasons as claim 40. Accordingly, applicant respectfully
24 submits the anticipation rejection should be withdrawn and claim 41 should be
25 allowed.

1 Claim 52 also has been amended to further distinguish over the reference
2 cited. Claim 52 as amended is reproduced below for the convenience of the
3 Examiner:

4 52. (Currently Amended) A clamping system for clamping a work piece during manufacturing, the system comprising:

5 one or more force applying means arranged to apply a clamping force to the work piece, wherein the force applying means are
6 configured to be laterally simultaneously motivated by an
7 externally-powered means for powering the force applying
means configured to drive the force applying member relative
to the body; and

8 one or more pivoting means arranged in a chain with the one or more force applying means, the pivoting means arranged to pivot to conform the chain to a surface of the work piece.

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10 Respectfully, and incorporating the description of the references cited with regard
11 to claim 40, neither the asserted anticipatory reference to Reyner nor any of the
12 other references cited in the Office Action, teaches or suggests “force applying
13 means . . . configured to be laterally simultaneously motivated by an externally
14 powered means.” Again, Reyner discloses a rotationally-driven or screw-driven
15 mechanism. Accordingly, because Reyner fails to teach or suggest this element of
16 claim 52, applicant respectfully submits the anticipation rejection should be
17 withdrawn and claim 52 as amended should be allowed.

18 Claims 42-45 and 54-55 depend from and apply additional limitations to
19 the respective independent claims from which they depend. Thus, applicant
20 respectfully submits that these claims are allowable for at least the same reasons as
21 the independent claims from which they depend. Accordingly, applicant
22 respectfully requests that the anticipation rejection be withdrawn against claims
23 42-45 and 54-55.

REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 1, 2, 4, 12, 21, 30, 42, and 54 were rejected as unpatentable over Reyner in view of U.S. Patent No. 2,324,803 to Snyder (hereinafter, "Snyder"). Applicant traverses the rejections. Further, applicant has amended independent claims 1 and 21 to further distinguish over the references cited.

Claim 1 as amended is reproduced below for the convenience of the Examiner:

1. (Currently Amended) A clamping system for securing a first surface of a work piece against a frame, the clamping system comprising:
 - a plurality of end supports, each of the end supports being configured to be coupled to an anchor;
 - one or more force applying units, each of the force applying units unit including a body and a plunger movably coupled to the body and adapted to apply a clamping force to a second surface of the work piece to secure the first surface of the work piece against the frame; and
 - one or more coupling units linked with the one or more force applying units forming a chain interspersing of force applying units and coupling units between the plurality of end supports to support the force applying units against a second surface of the work piece opposite the first surface, each coupling unit including a lockable pivot, the lockable pivot adapted to pivot to conform the chain to a surface of the work piece when unlocked, and adapted to be locked when at least one of the force applying units applies the clamping force to the work piece.

The Office Action acknowledges that Reyner fails to teach or suggest lockable coupling units. Applicant submits that claim 1 as amended further distinguishes over the references, either alone or in combination.

Applicant submits that claim 1 as amended distinguishes over the cited references for at least three reasons. First, neither Reyner nor Snyder discloses “a plurality of end supports.” Reyner discloses no end supports for supporting its clamps at all. While applicant concedes that Snyder discloses a single end

1 support, it is important to note that only a single support is disclosed. As
2 explained by Snyder, this is intentional: "These clamps are then adjusted to
3 position the two pieces of work relative to each other for welding which may be
4 expeditiously accomplished by reason of the adjustability of the arm." (Snyder,
5 Column 2, Line 55, through Column 3, Line 3). Thus, if Snyder included more
6 than one end support, its expressed purpose would be defeated. Accordingly,
7 Snyder teaches away from what is recited by claim 1 as amended. Thus, applicant
8 respectfully submits that the obviousness rejection against claim 1 should be
9 withdrawn, and claim 1 is in condition for allowance.

10 Second, neither Reyner nor Snyder discloses "a chain interspersing force
11 applying units and coupling units." Reyner, as previously stated, includes no
12 lockable coupling units. Considering Snyder, it discloses a pair of claims joined
13 by a number of links; however, it does not disclose interspersing force applying
14 units and lockable coupling units in a chain. Thus, Snyder fails to make up for the
15 shortcomings of Reyner in teaching what is recited by claim 1 as amended. Thus,
16 applicant again respectfully submits that the obviousness rejection against claim 1
17 should be withdrawn, and claim 1 is in condition for allowance.

18 Third, neither Reyner nor Snyder discloses supporting "the force applying
19 units against a second surface of the work piece opposite the first surface."
20 Reyner and Snyder both disclose clamps. Reyner is directed to "holding a wood
21 structure composed of several contiguous side members glued to one another at
22 mitered joints." (Reyner, Column 1, Lines 25-27). Snyder, as previously
23 described, is directed "to position . . . two pieces of work relative to each other for
24 welding which may be expeditiously accomplished by reason of the adjustability
25 of the arm." (Snyder, Column 2, Line 55, through Column 3, Line 3). Neither of

1 these references discloses supporting force applying units against a second surface
2 "for securing a first surface of a work piece against a frame" as recited by claim 1
3 as amended. Thus, for this reason, and for the foregoing reasons, applicant
4 respectfully requests the obviousness rejection be removed against claim 1, and
5 that claim 1 is in condition for allowance.

6 Applicant submits that claim 21 as amended also distinguishes over the
7 cited references. Claim 21 as amended is reproduced here for the convenience of
8 the Examiner:

9 21. (Currently Amended) A clamping system for securing a
10 first surface of a work piece against a frame during manufacturing,
the clamping system comprising:

11 a plurality of end supports, each of the end supports being
configured to support the clamping system against the work
piece;

12 one or more externally powered force applying units, each
13 powered force applying unit including a body and a plunger
movably attached to the body arranged to apply a clamping
force to a work piece; and

14 one or more elbow units, each elbow unit including a lockable
15 pivot, attached to and interspersed with the one or more force
16 applying units forming a chain of force applying units and
elbows between the plurality of end supports, the lockable
17 pivot arranged to pivot to conform the chain to a surface of
the work piece when unlocked, and arranged to lock when the
force applying unit applies the clamping force to the work
piece.

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19 Specifically, applicant submits that claim 21 as amended is patentable over the
20 cited references because neither Reyner nor Snyder discloses "a plurality of end
21 supports." As explained, Snyder teaches away from using a plurality of end
22 supports, and thus fails to overcome the shortcomings of Reyner. Thus, applicant
23 respectfully requests that the obviousness rejection be withdrawn against claim 21.

24 Claims 2, 4, 7, 8, 11, 14, 15, 25, 26, 29, and 31 depend from and apply
25 additional limitations to the respective independent claims from which they

1 depend. Thus, applicant respectfully submits that these claims are allowable for at
2 least the same reasons as the independent claims from which they depend.
3 Accordingly, applicant respectfully requests that the obviousness rejection be
4 withdrawn against claims 2, 4, 7, 8, 11, 14, 15, 25, 26, 29, and 31.

5 Applicant offers one additional comment with regard to claims 14, 15 and
6 31. The Office Action relies on U.S. Patent No. 5,280,892 to Smith (hereinafter,
7 “Smith”), to make up for the shortcomings of Reyner and Smith in teaching what
8 is recited in claims 14 and 31. Specifically, the Office Action suggests that Smith
9 teaches an externally powered or electrically powered force applying unit.
10 However, Smith fails to disclose this element. As previously described, Reyner
11 and Snyder rely on hand-turned clamps; similarly, Smith teaches using “a vise grip
12 pliers or similar tool.” (Smith, Abstract, Line 7). Respectfully, none of these
13 references teach externally or electrically powered force applying units. Thus,
14 applicant submits that claims 14, 15, and 31 are further distinct from the
15 references cited, and should be allowed for this additional reason.

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CONCLUSION

Applicant respectfully submits that claims 1, 2, 4, 7, 8, 11, 12, 14, 15, 21, 25, 26, 29-31, 40-42, 45, and 52-55 are in condition for allowance. Applicant respectfully requests entry of the amendment, as well as consideration and prompt allowance of the claims. If any issue remains unresolved that would prevent allowance of this case, the Examiner is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

Dated: 7-18-2006

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